

WHAT IS CLAIMED IS

1. Apparatus for selectively varying the environmental temperature of a vehicle seat comprising:
5 a support member in the seat having an integral air flow path, the air flow path having an inlet for receiving temperature conditioned air therein, and further having an outlet with an integral plurality of air channels proximate an outer surface of the support member;
10 the outer surface of the support member connecting to a porous member which substantially covers the outer surface area of the support member, the porous member having an interface with the integral plurality of air channels; and
15 a seat covering substantially encapsulating the porous member to the support member.

2. An apparatus as defined in claim 1 wherein the support member comprises a fiberglass reinforced plastic.

3. An apparatus as defined in claim 1 wherein the support member comprises a foam.

4. An apparatus as defined in claim 1 wherein the support member comprises a cellular spongy material.

5. An apparatus as defined in claim 1 wherein the porous member comprises a first porous member and a second porous member, the outer surface of the support member connecting to the first porous member which substantially covers the outer surface area of the support member, the first porous member having an interface with the integral plurality of air channels; and the second porous member substantially encapsulating the first porous member.

1 6. An apparatus as defined in claim 5 wherein the
first porous member is a substantially mono-directional
porous member.

5 7. An apparatus as defined in claim 5 wherein the
first porous member is a substantially stiff and porous
plastic screen material.

10 8. An apparatus as defined in claim 5 wherein the
second porous member is a substantially multi-directional
porous member.

15 9. An apparatus as defined in claim 5 wherein the
second porous member is a substantially mono-directional
flexible porous member.

20 10. An apparatus as defined in claim 9 wherein the
mono-directional flexible porous member comprises a
plurality of substantially mono-directional channels.

25 11. An apparatus as defined in claim 5 wherein the
second porous member comprises a reticulated foam.

12. An apparatus as defined in claim 1 wherein the
seat covering incorporates a plurality of stitched valleys
that compress the seat covering into the porous member
such that air is able to pass from the cushion outlet to
the formed valleys.

30 13. An apparatus as defined in claim 1 wherein the
seat covering incorporates a plurality of stitched valleys
that contact the porous member such that air is able to
exit from the cushion outlet to the formed valleys.

35 14. An apparatus as defined in claim 1 wherein the
seat covering comprises an air permeable material.

1 15. An apparatus as defined in claim 1 wherein the
seat covering comprises an air permeable fabric.

5 16. An apparatus as defined in claim 1 wherein the
seat covering comprises a perforated leather.

10 17. An apparatus as defined in claim 1 further
comprising a backrest portion and a sitting portion.

15 18. Apparatus for selectively varying the
environmental temperature of a vehicle seat comprising:
a resilient cushion forming a support member in
the seat having an integral air flow path, the air flow
path having an inlet for receiving temperature conditioned
air therein, and further having an outlet with an integral
plurality of air channels proximate an outer surface of
the cushion; and

20 the outer surface of the cushion connecting to
a flexible seat covering substantially encapsulating the
outer surface area of the cushion, the flexible seat
covering having an interface with the integral plurality
of air channels.

25 19. An apparatus as defined in claim 18 wherein the
resilient cushion comprises a cellular spongy material.

30 20. An apparatus as defined in claim 18 wherein the
resilient cushion comprises a foam.

35 21. An apparatus as defined in claim 18 further
comprising a flexible porous member, the outer surface of
the cushion connecting to the flexible porous member which
substantially covers the outer surface area of the
cushion, the flexible porous member having an interface
with the integral plurality of air channels, wherein the
flexible porous member is sandwiched between the cushion
and the flexible seat covering.

1 22. An apparatus as defined in claim 21 wherein the
flexible porous member is a substantially
multi-directional porous member.

5 23. An apparatus as defined in claim 21 wherein the
flexible porous member is a substantially mono-directional
flexible porous member.

10 24. An apparatus as defined in claim 23 wherein the
mono-directional flexible porous member comprises a
plurality of substantially mono-directional channels.

15 25. An apparatus as defined in claim 21 wherein the
flexible porous member comprises a reticulated foam.

20 26. An apparatus as defined in claim 18 wherein the
seat covering incorporates a plurality of stitched valleys
that compress the seat covering into the seat cushion such
that air is able to pass from the cushion outlet to the
formed valleys.

25 27. An apparatus as defined in claim 18 wherein the
seat covering incorporates a plurality of stitched valleys
that contact the seat cushion such that air is able to
exit from the cushion outlet to the formed valleys.

27 28. An apparatus as defined in claim 18 wherein the
seat covering comprises an air permeable material.

30 29. An apparatus as defined in claim 18 wherein the
seat covering comprises an air permeable fabric.

35 30. An apparatus as defined in claim 18 wherein the
seat covering comprises a perforated leather.

35 31. An apparatus as defined in claim 18 further
comprising a backrest portion and a sitting portion.

32. Apparatus for selectively varying the environmental temperature of a vehicle seat comprising:
5 a cellular spongy material cushion forming a support member in the seat having an integral air flow path, the air flow path having an inlet for receiving temperature conditioned air therein, and further having an outlet with an integral plurality of air channels proximate an outer surface of the cushion;
10 the outer surface of the cushion connecting to a reticulated foam which substantially covers the outer surface area of the cushion, the reticulated foam having an interface with the integral plurality of air channels; and
15 an air permeable seat covering substantially encapsulating the reticulated foam to the cushion.

33. An apparatus as defined in claim 32 wherein the seat covering incorporates a plurality of stitched valleys that compress the seat covering into the flexible porous member such that air is able to pass from the cushion outlet to the formed valleys.

34. An apparatus as defined in claim 32 wherein the seat covering incorporates a plurality of stitched valleys that contact the flexible porous member such that air is able to exit from the cushion outlet to the formed valleys.

35. Apparatus for selectively varying the environmental temperature of a vehicle seat comprising:
30 a foam cushion forming a support member in the seat having an integral air flow path, the air flow path having an inlet for receiving temperature conditioned air therein, and further having an outlet with an integral plurality of air channels proximate an outer surface of the cushion;

1 the outer surface of the cushion incorporating
a flexible substantially honeycomb channel arrangement
that covers at least a portion of the outer surface area
of the cushion, the honeycomb channel arrangement having
5 an interface with the integral plurality of air channels;
and

an air permeable seat covering substantially encapsulating the honeycomb channel arrangement to the cushion.

10 36. An apparatus as defined in claim 35 wherein the honeycomb channel arrangement comprises a substantially mono-directional flexible porous member.

15 37. An apparatus as defined in claim 36 wherein the mono-directional flexible porous member comprises a plurality of substantially mono-directional channels.

38. An apparatus as defined in claim 35 wherein the seat covering incorporates a plurality of stitched valleys that compress the seat covering into the flexible porous member such that air is able to pass from the cushion outlet to the formed valleys.

25 39. An apparatus as defined in claim 35 wherein the
seat covering incorporates a plurality of stitched valleys
that contact the flexible porous member such that air is
able to exit from the cushion outlet to the formed
valleys.

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